



EXHIBIT A

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INVENTION DISCLOSURE

REDACT

PAGE ONE OF 6

PDNO

10015525

DATE RCVD

ATTORNEY AJN

Instructions: The information contained in this document is **COMPANY CONFIDENTIAL** and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.

Descriptive Title of Invention: HTTP Cookie Proxy

Name of Project: Universal Session Manager

Product Name or Number: Total-e-Mobile

COPY

Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s):

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Was a product including the invention announced, offered for sale, sold, or is such activity proposed? If so, the date(s) and location(s):

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Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s):

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If any of the above situations will occur within 3 months, call your IP attorney or the Legal Department now at 1-898-4919 or 970-898-4919.

Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.)

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Was the invention built or tested? If so, the date:

Yes, it was built in REDACT

and released in the Total-e-Mobile 1.0 product in REDACT

Was this invention made under a government contract? If so, the agency and contract number:

REDACT

Description of Invention: Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).

- Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)
- Advantages of the invention over what has been done before.
- Problems solved by the invention.
- Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).

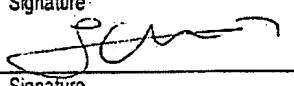
Signature of Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [REDACT].

| Employee No. | Name | Signature | Telnet | Mailstop | Entity & Lab Name |
|--------------|-----------------|-----------|--------|----------|-------------------|
| REDACT | John Mazzitelli | | REDACT | | HP Bluestone |
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(If more than four inventors, include additional information on another copy of this form and attach to this document)

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| INVENTION DISCLOSURE | | COMPANY CONFIDENTIAL | PAGE <u>2</u> OF <u>6</u> |
| Signature of Witness(es): <i>(Please try to obtain the signature of the person(s) to whom invention was first disclosed.)</i> | | | |
| The invention was first explained to, and understood by, me (us) on this date: [REDACT] | | | |
| Full Name | Signature | Date of Signature | |
| VINCENT SCHÖENFELD |  | REDACT | |
| Full Name | Signature | Date of Signature | |
| | | | |

| | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------|-----|
| Inventor & Home Address Information: <i>(If more than four inventors, include addl. information on a copy of this form & attach to this document)</i> | | | |
| Inventor's Full Name | | | |
| John Joseph Mazzitelli | | | |
| Street | | | |
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| City | State | Zip | |
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| Greeted as <i>(nickname, middle name, etc.)</i> | | Citizenship | |
| | | United States of America | |

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Description of Invention: Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).

- A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)

The HTTP Cookie Proxy is a component that is housed inside of the Universal Session Manager product which sits between a remote client device and a web server. The Universal Session Manager and its internal HTTP Cookie Proxy component is currently implemented as a customized listener that plugs into the HP Bluestone Universal Listener Framework (ULF). The algorithm is as follows:

- 1) Accept HTTP requests from the client device (e.g., a WAP phone)
- 2) Extracts a unique client identifier from that HTTP request that uniquely identifies the remote client.
- 3) Adds any cookies belonging to that client to the request via an HTTP cookie header.
- 4) Forwards the request (with the new HTTP cookie headers) to a web server.
- 5) When the web server returns the HTTP response, the component will parse that response and extract all HTTP set-cookie headers. If any set-cookie headers are found, those cookies are stored in a cookie storage area for later retrieval when the client submits future HTTP requests (i.e. used in step 3).
- 6) The HTTP Cookie Proxy passes the response unaltered back to the client.

Other than adding cookie headers to the forwarded HTTP request, no other modifications are made to the request and, no modifications are performed on the web server's HTTP response. By default, the cookies are stored in-process; that is to say, they are stored in the same Java Virtual Machine memory space as the HTTP Cookie Proxy. It is conceivable that you might want to store this cookie information in persistent storage (like a file system or database) for better fault tolerance. The HTTP Cookie Proxy has, therefore, been designed to allow for an implementation that does these things to plug in seamlessly.

FIGURE A.

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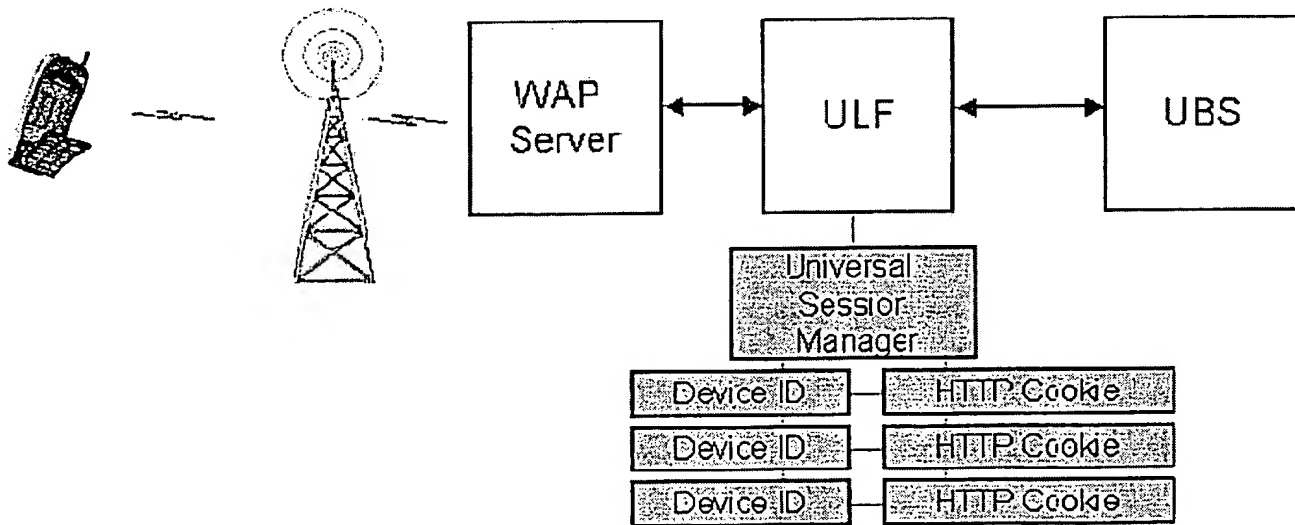
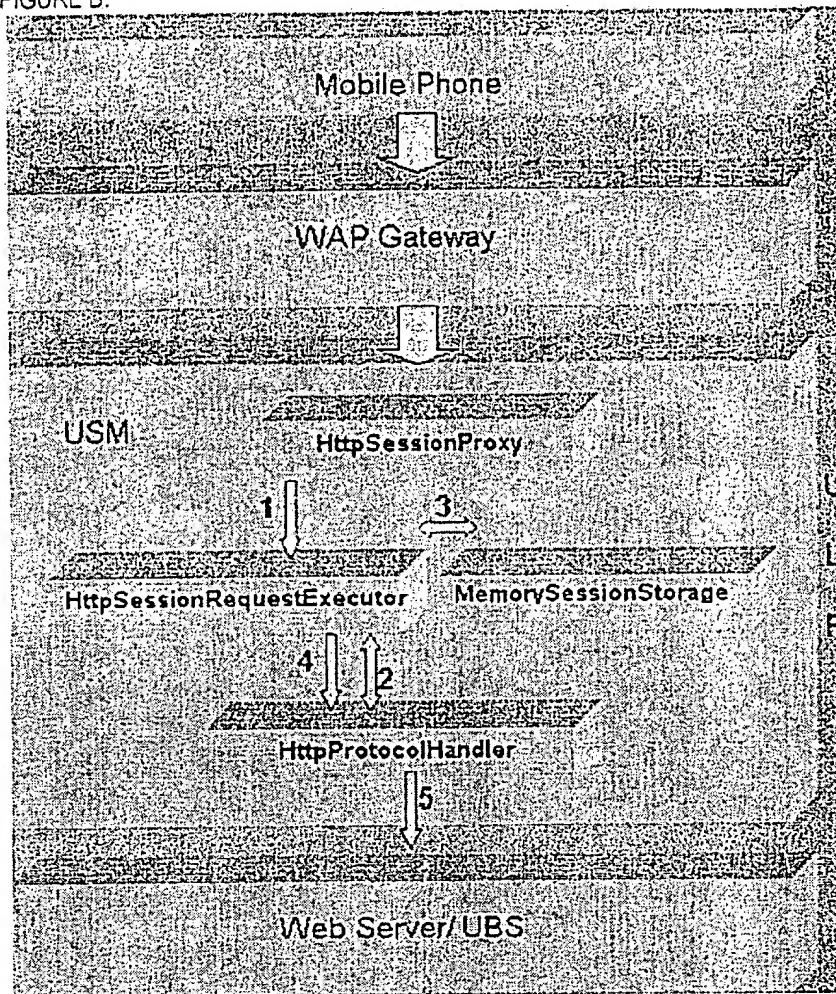


FIGURE A shows an example of how the Universal Session Manager (which houses the HTTP Cookie Proxy components) could be used to facilitate requests between a WAP phone and an HP Bluestone Universal Business Server (UBS) application.

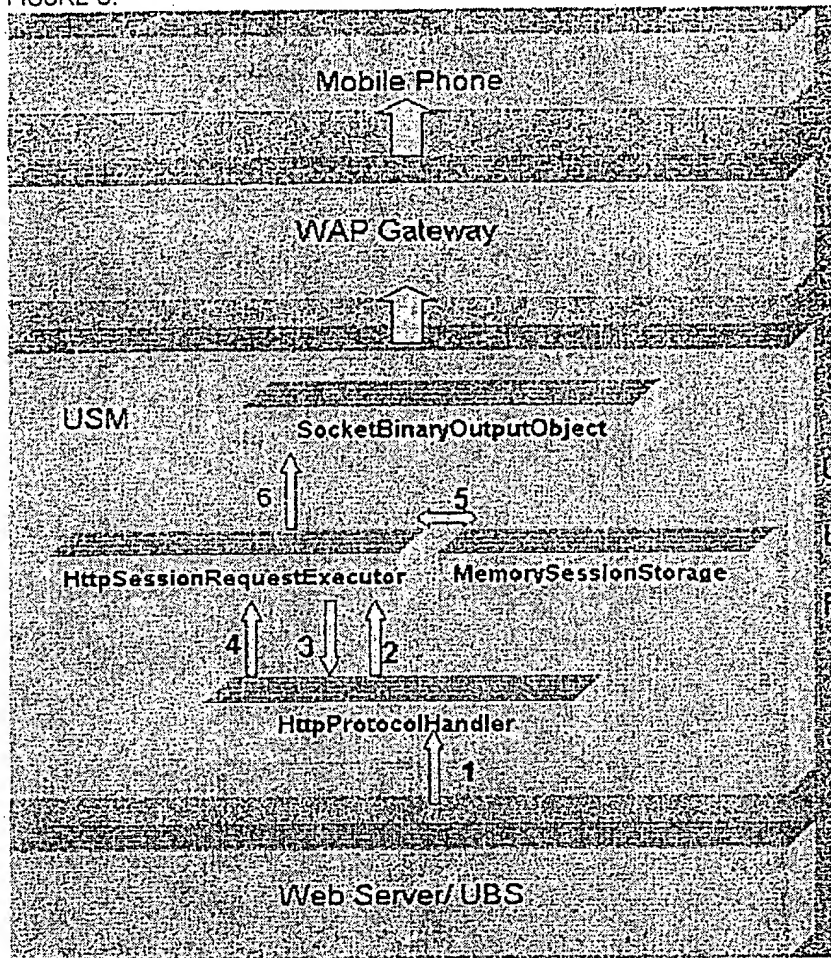
FIGURE B.



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FIGURE B illustrates the Request Scenario – that is, the flow diagram that indicates how an HTTP request from a client device flows through the HTTP Cookie Proxy to its final destination, that being a web server or application server:

FIGURE C.



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FIGURE C illustrates the Response Scenario – that is, the flow diagram that indicates how an HTTP response from a web or application server flows through the HTTP Cookie Proxy back to its requestor, that being a remote client device.

B. Advantages of the invention over what has been done before.

Without using this HTTP Cookie Proxy, some client devices cannot maintain state information and thus could not access certain web and/or application servers. The advantage to using this component is that now a device which previously had been unable to effectively use certain web and application servers can now do so without failure. Another advantage is that the HTTP Cookie Proxy can be added to an application deployment without the application developer or the client device knowing that it is involved in the interaction between client and server. Therefore, it can be added to an existing or future application deployment without requiring additional coding effort to be expended. It snaps in

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seamlessly and invisibly to the client and server programs.

C. Problems solved by the invention.

Some client devices do not have the capability to store HTTP cookies. This can lead to problems since some web and Application Servers pass cookies to clients in order to maintain session and state information between requests – without the ability to store cookies on a per-client basis, state and session information cannot be maintained across multiple requests from the same client. The HTTP Cookie Proxy works around this problem by providing a mechanism by which the cookie information is no longer required to be stored in the client device.

D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).

A prior solution would be to force the web/application server developer to encode the cookie information in the returned anchor and form action URLs. The disadvantage to this is that it requires additional work on the application developer to specifically code their applications to do this additional, specialized handling for the specific devices that cannot handle cookies. Another disadvantage is that the URLs themselves may grow too long in length, depending on how the cookie information is encoded on the URL. Some devices may not or can not display or accept URL strings longer than a certain length. If that length is exceeded, the client will again be rendered useless with respect to its ability to interact with the web or application server.